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ECOMMERCE WEB CONTENT ADOPTION MODEL (EWCAM): AN INTEGRATED TOOL FOR WCA AND EMICA MODELS FOR THE TOURISM INDUSTRY

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ABSTRACT

The aim of this work is to develop a model that synthesizes the properties of WCA (Web Content Analysis) and eMICA (extended Model of Internet Commerce Adoption). The development was based on a multivariate analysis (Principal Component Analysis and Structural Equation Models) carried out on a real sample of companies, specifically ski resorts. The resulting model, e-Commerce Web Content Adoption Model (eWCAM) is a modification of the WCA, which has properties attributed to eMICA. This makes it much easier to check whether websites of Tourism Industry have the right information and are mature enough for e-commerce.

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Keywords: Web Content Analysis; eMICA; website; ecommerce; eWCAM; ski resorts; mountain tourism.

Modelo de Adopción de Contenidos web para el Comercio Electrónico (eWCAM): una herramienta integrada para los modelos WCA y eMICA para la industria del turismo

RESUMEN

El objetivo de este trabajo es desarrollar un modelo que sintetice las propiedades de WCA (Web Content Analysis) y eMICA (extended Model of Internet Commerce Adoption). Su desarrollo se ha basado en un análisis multivariante (Análisis de Componentes Principales y Modelos de Ecuaciones Estructurales) realizado sobre una muestra real de empresas, concretamente de estaciones de esquí. El modelo resultante, e-Commerce Web Content Adoption Model (eWCAM) es una modificación del WCA, que tiene propiedades atribuidas al eMICA. Esto facilita la comprobación de si los sitios web de la industria turística tienen la información adecuada y están suficientemente maduros para el comercio electrónico.

Palabras clave: Análisis de Contenido Web; eMICA; sitio web; comercio electrónico; eWCAM; estaciones de esquí; turismo de montaña.

1. INTRODUCTION

Due to digital transformation and changes in consumer behaviors, today's customer is interconnected, technological, and global; thus, speed and immediacy have become paramount (Filieri and McLeay, 2014; Leung *et al*., 2015; Siqueira *et al*., 2020; Xu and Koivumäki, 2019). This generation of consumer seeks information in real time, makes online comments, consults hundreds of different sources before booking, likes local experiences, and demands free and high-quality Wi–Fi access (Hofacker and Belanche, 2016; Munar and Jacobsen, 2014). This is a new generation of users where digital natives go a step farther and become producers of content and trends, sharing their travel impressions, their opinions about places, and their recommendations about companies, products, and services (Herrero *et al*., 2015; Kim and Fesenmaier, 2015; Nawijn *et al*., 2013). Nowadays, in the era of immediacy and mobile devices, the customer is increasingly demanding, looking for information on the spot, and consulting establishment websites, which have become a "presentation card" of vital importance both to facilitate their use by the customer and to position and differentiate themselves from the competition (Daries *et al*., 2018; Dijkmans *et al*., 2015).

The fourth industrial revolution has affected all sectors; however, due to the intangibility and perishability of tourism services, new technologies have changed how we book, purchase, and travel (Chong *et al*., 2018; Dijkmans *et al*., 2015; Hua, 2016; Rasoolimanesh *et al*., 2019; Veloso *et al*., 2020). Companies such as carriers or travel intermediaries have quickly adapted, thus becoming pioneers, but there are still many others that have not adapted and implemented changes at the same speed, e.g., ski resorts, golf courses, restaurants (Cristobal-Fransi *et al*., 2021; Daries *et al*., 2021).

Given the key importance of Internet presence for these companies, several authors have proposed tools to measure the degree of maturity and content of Web pages, thus applying methods of content analysis and adoption of e-commerce (Baloglu and Pekcan, 2006; Burgess and Cooper, 2000; Burgess *et al*., 2011; Cantoni *et al*., 2011; Cao and Yang, 2016; Chung and Law, 2003; Cristobal-Fransi *et al*., 2017; Daries *et al*., 2018; Davidson, 2007; Doolin *et al*., 2002; Escobar and Carvajal, 2013; Heinze and Hu, 2006; Lee and Morrison, 2010; Liao *et al*., 2006; Robbins and Stylianou, 2003; Schmidt *et al*., 2008; Tamimi and Sebastianelli, 2015; Ting *et al*., 2013; Walcott, 2007). These methods are exhaustive and laborious due to the number of items in the scales that make up the models; furthermore, sometimes the items are repeated, or the characteristics are similar.

The objective of this article is to create a model that serves as a methodological tool to measure, in an efficient way, the degree of adaptation of tourism companies' websites to the needs of the potential customers browsing the Internet. To achieve this goal, starting with the case of the ski resorts in Spain, Andorra, and France, to which the Web Content Analysis (WCA) and extended Model of Internet Commerce Adoption (eMICA) are applied, data analysis is carried out using various multivariate techniques, which allow a model to be proposed, i.e., one that integrates the properties of the two models indicated and is easier to apply: the e-Commerce Web Content Adoption Model (eWCAM). This article is structured as follows: after this introduction, there is a section on the case study and the application of the two models (WCA and eMICA); in the following section, the methodology and analysis prior to the final version of the model are presented; the results section presents the data of the last analysis carried out and the proposal of the new alternative model (eWCAM). Finally, the managerial implications and research limitations are discussed.

2. CASE STUDY

For the case study, ski resort websites have been selected, due to the importance of snow tourism and profiles of clients who practice this sport (e.g., young and technologically active people). Resorts in France and Spain (including two in Andorra) were chosen, as these countries offer winter tourism. France, the United States, and Spain have the most foreign tourists' percentage (Vanat, 2021). In both countries, snow tourism is an important economic sector that favours the diversification of national tourism and helps to distribute wealth, especially in the most disadvantaged and least populated areas (Steiger and Scott, 2020).

Ski tourism has become one of the main resources and attractions in the areas where the resorts are located. The strength generated by the ski industry as well its related activities means that this sector has become one of the main economic and employment drivers of winter tourism, especially in areas that were often at risk of depopulation (McLeay *et al*., 2019). Few businesses are located in the mountain areas having such a notable influence on economic growth and territorial transformation as the ski resorts (Martínez *et al*., 2014; Rech *et al*., 2019). Such relevance is evidenced by the higher occupancy levels of tourists in hotel and catering establishments and the number of jobs they generate directly and indirectly (Bošković *et al*., 2020; Cristobal-Fransi *et al*., 2017). However, despite their importance, studies show that ski resort websites are still not sufficiently adapted and do not take advantage of the possibilities offered by digital technologies (Cristobal-Fransi *et al*., 2018).

2.1. The WCA

By reviewing the existing literature (Álvarez, 2014; Baloglu and Pekcan, 2006; Bingley *et al*., 2010; Chung and Law, 2003; Escobar and Carvajal, 2013; Hämäläinen *et al*., 2020; Lee and Morrison, 2010; Moura *et al*., 2016; Schegg *et al*., 2002; Woodside *et al*., 2011), the WCA was adapted for application to ski resorts. The objective was to create the necessary items to facilitate the information and interaction with the ski resort customers in all aspects – from the resort information to the purchase and booking of all kinds of activities in a safe and efficient way – providing the quality that is currently required of a website. The model was based on four factors: information, communication, electronic commerce, and additional functions (Table 1), each of which in turn grouped different items (Appendix I).

Table 1
MODEL FOR SKI RESORT WCA

Dimension	Definition
Information	Assesses the information available on the ski resort website and the ease with which users can find it.
Communication	Measures the extent to which the website enables interaction with costumers, whether through communication mechanisms, Web 2.0 resources, or the availability of information in multiple languages.
e-Commerce	Assesses the extent to which the website enables secure commercial transactions.
Additional Features	Measures the extent to which the website conveys a sense of security through data protection features and certifications and the use of new media such as a mobile version of the website or an app.

Source: Cristobal-Fransi *et al*. (2018).

The WCA is intended as a way to check whether or not the website content is extensive. To do this, the content is divided into several types and subtypes, which allow the determination of the site's strengths and weaknesses. Although the WCA model does not feature an evolutionary vision of websites in its approach, it could not be ruled out because an improvement in content and presentation may be indicative of a temporal evolution. Therefore, the WCA could have properties assigned to eMICA that have not been taken into account.

2.2. The eMICA

The degree of maturity of the ski resort websites has been measured by adapting the eMICA model, which is based on knowing the analysed website's stage of maturity. To do this, different stages are considered, from basic functions to much more complex functions, which incorporate more complex processes, greater interactivity, etc. (Table 2). It is considered that the eMICA model, once the necessary adaptations have been made (Appendix II),

includes the logical dimensions that a website should have, i.e., information, communication, transaction (Bernal *et al*., 2018; Daries *et al*., 2016; Marimon *et al*., 2010). In the first phase, the use of the Internet as an element of communication and the services it offers can be observed. In the second phase, interactivity is considered, i.e., whether a website is dynamic. The last phase refers to the capacity to carry out e-commerce in a secure way.

Table 2
EMICA

Phases	Functionality Examples
Phase 1: Promotion	
Level 1. Basic information	Name, physical address and contact details, resort status, status of roads to the resort
Level 2. Rich information	Annual report, email contacts, information on activities and business environment, online incentives, weather forecast, etc.
Phase 2: Provision	
Level 1. Low interactivity	Complete product catalogue, hyperlinks to additional information, online query form, possibility to complete online surveys
Level 2. Medium interactivity	Complete product catalogue, user support (FAQs, website maps, virtual tours, georeferencing, webcam, etc.), industry information
Level 3. High interactivity	Chat feature, discussion forums, multimedia features, newsletters or news by email; presence on social media and links to tourism review websites
Phase 3: Processing	Secure transactions, digital signature and encryption, order tracking and status, interaction with servers and databases, Web 2.0, user-generated content

Source: Burgess and Cooper (2000) and Burgess *et al*. (2011).

The stages of eMICA present a clear relationship with the evolution of the Internet from the first web pages, very basic in content and information, to the most recent web pages, which are quite complete and offer many different functionalities. However, it could be asked if current web pages follow the same evolution or behave differently. It could also be that the current web pages follow a different order, and the stages proposed in the eMICA were implemented in parallel and not sequentially (Cristobal-Fransi *et al*., 2019).

2.3. Case Study Results

A sample of 225 ski resorts, located in Spain (50), Andorra (2), and France (173), which feature both alpine and Nordic skiing, was used. For the total sample, the websites were analysed in relation to the items of the WCA model (Appendix I) and the eMICA model (Appendix II). The levels of compliance of the items vary considerably between the different subtypes of both models (Table 3). In relation to the eMICA model, there seems to be a tendency to fulfil fewer items in the more advanced phases than in the initial

phases, something that intuitively seems to be consistent with the model's proposal. In the case of the WCA, there is quite a lot of variability; further, no clear trend is perceived.

Table 3
RESULTS SUMMARY OF BOTH MODELS

	Items	Maximum	Minimum	Sample Mean	%	Standard Deviation
eMICA						
eMICA1.1	6	6	1	4.444	74.1%	0.979
eMICA1.2	7	7	1	5.364	76.6%	1.399
eMICA2.1	9	8	0	5.973	66.4%	1.546
eMICA2.2	12	11	0	6.151	51.3%	2.479
eMICA2.3	13	10	0	4.711	36.2%	1.867
eMICA3.1	5	5	0	1.840	36.8%	1.716
WCA						
WCA-I.1	17	14	1	10.502	61.8%	2.179
WCA-I.2	7	6	0	2.764	39.5%	1.851
WCA-I.3	2	2	0	1.493	74.7%	0.844
WCA-I.4	2	2	0	1.280	64.0%	0.658
WCA-C.1	8	6	0	2.302	28.8%	1.114
WCA-C.2	10	5	0	2.533	25.3%	1.075
WCA-C.3	1	1	0	0.720	72.0%	0.449
WCA-CE	2	2	0	1.013	50.7%	0.835
WCA-AF.1	1	1	0	0.858	85.8%	0.349
WCA-AF.2	4	3	0	0.564	14.1%	0.710
WCA-AF.3	2	2	0	1.084	54.2%	0.539

Each model provides interesting insights into the website analysis; however, the extent of both models and their joint application makes the analysis costly and time-consuming. It should be noted that 52 items belong to eMICA and 56 belong to WCA, totaling 108 items. As interesting as both models may seem, the volume of items makes their routine application impractical, especially for companies and consulting firms. This makes the search for a new tool or model that allows us to reach the same objectives but with fewer items and, therefore, in a simpler and faster way an objective of interest. The analysis carried out to help achieve the objective of proposing a simpler tool is presented in the following section.

3. METHODOLOGY

For development of the new analysis tool, it would have been possible to work in a theoretical way and to reason the proposal made. Due to the enormous volume of data generated by the application of both models, however, the use of various multivariate analysis techniques was chosen to shed light on the behaviour of the elements contained in the models used. In order to transform the qualitative information (i.e., "whether it

meets" or "does not meet" a certain item) into quantitative information, each subsection of both models was expressed by the number of items met by the ski resort. In this way, 108 items were reduced to 17 numerical variables. As in the original analysis, the items in a subsection are considered to be equal and interchangeable, with only the total of the section being imported as an indicator of the development of the section.

The multivariate tools used were Principal Component Analysis (PCA) and Structural Equation Models (SEM), specifically using Partial Least Squares (PLS-SEM). Several simple principles were adopted to interpret the analysis results:

- Highly correlated variables should go together because they measure the same thing or things that behave in a coordinated way.
- If there is a phased evolution, the high compliance with the items of a phase should have a positive causal effect on the compliance with subsequent phases.
- If both models are to be merged, there should be clear casual relationships between the components of both models.

Therefore, taking as working data the 17 quantitative variables into which the 108 items reviewed for the sample of 225 ski resorts in Spain, Andorra, and France have been condensed, two main component analyzes were carried out: one on the variables of the eMICA model and another on the variables of the WCA model.

The eMICA's PCA (Table 4) shows a fairly clear result by reducing the six variables to two factors and having high factor loads for all variables. The eMICA model can be summarised in two variables: the level 1 of phase 1 and the remaining variables. The level 1 of phase 1 features the most basic and almost essential data. In the model's remaining elements, the grouping into a single factor indicates that they measure a single element or several elements that evolve simultaneously. This generates the suspicion that the phases are not sequential in their development and that companies implement elements from the different phases in parallel. If this were the case, eMICA would be a theoretical proposal of historical evolution but not a tool to evaluate the development of a specific website.

Table 4
EMICA'S PCA

Variables	Factor 1	Factor 2	Communality
eMICA1.1	0.020	0.967	0.935
eMICA1.2	0.819	-0.004	0.670
eMICA2.1	0.690	0.394	0.631
eMICA2.2	0.879	-0.106	0.785
eMICA2.3	0.836	0.188	0.735
eMICA3.1	0.706	0.055	0.501
Own value	3.116	1.140	
% of variance	51.94%	19.00%	
% accumulated	53.17%	70.94%	

Test de Bartlett: $\chi 2 = 504.173$ ($p = 0.000$).

The WCA's PCA (Table 5) divides the 11 variables into three factors but does not give as clear a result as in the case of eMICA. It does note that the elements of additional features seem adequate to bring them together. In the case of information and communication, it is more appropriate to group information and communication variables at equivalent levels, since only the immediately consecutive information or communication variables have any relationship. This would suggest that the WCA model could have the properties attributed to eMICA if it is restructured; with the PCA carried out, however, it is not yet clear whether the necessary characteristics are given.

Table 5
WCA'S PCA

Variables	Factor 1	Factor 2	Factor 3	Communality
WCA-I.1	0.418	0.522	0.466	0.664
WCA-I.2	0.049	0.824	0.036	0.683
WCA-I.3	0.783	-0.246	0.008	0.674
WCA-I.4	0.735	0.177	0.177	0.603
WCA-C.1	0.582	0.356	0.066	0.470
WCA-C.2	-0.002	0.797	0.013	0.635
WCA-C.3	0.702	0.211	0.180	0.570
WCA-CE	0.290	0.703	0.143	0.599
WCA-AF.1	0.420	0.113	0.528	0.468
WCA-AF.2	0.019	-0.123	0.802	0.659
WCA-AF.3	0.117	0.241	0.782	0.684
Own value	2.438	2.430	1.842	
% of variance	22.16%	22.09%	16.74%	
% accumulated	34.78%	49.89%	60.99%	

Test de Bartlett: $\chi 2 = 696.957$ ($p = 0.000$).

For the next phase of analysis, the eMICA variables were grouped into two groups: eMICA 1 (Level 1 of Phase 1) and eMICA 2 (the rest of the model). The WCA is grouped as follows: WCA 1 (C.1 and I.1); WCA 2 (C.2 and I.2); WCA 3 (C.3, CE, I.3 and I.4); WCA 4 (AF.1, AF.2 and AF.3). Due to the result obtained in the initial WCA's PCA (Table 5), which was not entirely clear, other partial PCAs were carried out in order to better define the final factors (taking into account the included contents and the PCAs results). As a result of this procedure, WCA 3 groups four variables that initially did not seem clearly related. Furthermore, it is assumed that each new construct is a consecutive phase within its model and that, therefore, high values in the construct corresponding to one phase will generate a positive causal effect in the following phases, but the relationship will not be sufficient to consider if they constitute a single construct. Finally, it is considered that there must be causal relationships between the constructs of both models if their content is interchangeable or substitutable.

This leads to the design of an exploratory SEM, in which consecutive re-estimates of the model and modifications are made until a reasonable result is reached in both the analysis of the measurement model and of the structural model. The use of SEM allows for a confirmatory PCA, an analysis of the validity and reliability of the groupings of variables or constructs, and an analysis of the causal relationships posed. The constructs used are reflective and not formative because a central part of the analysis is to check whether the variables taken as items measure the same thing or, at least, are related. In this study, unlike the usual, the analysis of the measurement model is more important than the analysis of the structural model, since the definition of the groupings of variables, or constructs, are the main objective and the causal relations between them a complementary element.

As the SEM proposal adopts the nature of a data exploration and experimentation tool, PLS-SEM is used as a statistical method of analysis, which is the most suitable method for predictive (Loureiro and Kastenholz, 2011) or exploratory (theoretical proposals or developments) analysis. Methods based on covariance are more suitable for confirmatory analysis of well-established theories but are not the most suitable statistical method in this case. Specifically, Smart PLS software was used (Ringle *et al*., 2005), considered sufficient for the purpose of this article. Although there are no notable differences between the alternative weighting systems, path weighting was chosen because it provides the highest R^2 value and can be used in many different cases (Henseler *et al*., 2009).

The way of working consisted in introducing the database and the initial proposed model into the analysis software, carrying out successive analyses of the measurement model and the structural model with modifications between each analysis until reasonably acceptable results were achieved. These final results were considered the guide to propose the alternative tool for web page analysis. As indicated above, the analysis of the measurement model is central in this case and will be supported by several concepts and acceptance thresholds. The individual reliability of the items should be contrasted by means of the factorial load of each one: more than 0.600 is acceptable in exploratory studies; more than 0.700 is good; more than 0.800 is very good (Carmines and Zeller, 1979). Low levels of reliability force us to consider eliminating the item or variable to improve the model. The construct reliability measures the consistency of the elements of the construct, i.e., it seems that they measure the same thing. The two most used indicators for construct reliability are Cronbach's alpha (Cronbach, 1970) and composite reliability (Anderson and Gerbing, 1988; Bagozzi and Yi, 1988; Werts *et al*., 1974). In both cases, the results are considered good if they exceed 0.700 and much better if they exceed 0.800 (Nunnally, 1994).

The convergent and discriminant validity of the model should also be analysed (Anderson and Gerbing, 1988). The existence of convergent validity implies that a group of indicators belongs to a single underlying construct (Henseler *et al*., 2009) and is validated by an Average Variance Extracted (AVE) greater than 0.500 (Baggozi and Yi, 1998; Fornell and Larcker, 1981). Discriminant validity implies that each construct must be different from the rest of the constructs (Anderson and Gerbing, 1988) and has two methods for validation with PLS-SEM: the factorial loads must be greater than the factorial cross loads for all the indicators used; the square root of the AVE of the construct must be greater than the correlations with the rest of the constructs (Chin, 1998).

PLS does not assume a normal distribution of data; further, the significance tests used to analyze the structural model are nonparametric (Davison and Hinkley, 1997; Efron and Tibshirani, 1993; Henseler *et al*., 2009). The bootstrapping performed is a resampling procedure that randomly generates subsamples (in this case 5,000) from the original sample. The final result is the regression coefficients, the values of the Student's t-test, and the R^2 (Falk and Miller, 1992; Hair *et al*., 2014). To determine the critical values of Student's t-test, a Student's t-distribution of a tail with 4,999 degrees of freedom has been used. As already indicated, the analysis of the structural model is no longer the central objective but a complementary element to determine the relationship between the parts of the models.

When starting the analysis of the SEM created with the different groupings of variables and causal relationships, it is observed that eMICA 1 (Level 1 of Phase 1) only shows a certain causal relationship with WCA 1 (more basic information and communication) and the possibility of integrating Level 1 of Phase 1 of the eMICA within WCA 1 is raised, re-naming "eMICA 2" as "eMICA." Once this modification is made, the analysis of the SEM is carried out, both of the measurement model and of the structural model.

In this first analysis, it is observed that individual reliability is good or very good in most indicators; there are three variables (eMICA1.1, WCA-I.3, and WCA-AF.2), however, that have low values, and it would be convenient to consider their elimination. The reliability of the construct is acceptable in the case of Cronbach's alpha and good or very good in the case of composite reliability (Table 6).

Table 6
RELIABILITY AND VALIDITY OF THE INITIAL MODEL

	Loadings	AVE	Composite Reliability	R^2	Cronbachs' Alpha	Communality
WCA 1		0.551	0.780	0.000	0.615	0.551
WCA-C.1	0.737					
WCA-I.1	0.905					
eMICA1.1	0.541					
WCA 2		0.746	0.855	0.173	0.660	0.746
WCA-C.2	0.857					
WCA-I.2	0.871					
WCA 3		0.504	0.800	0.319	0.672	0.504
WCA-C.3	0.776					
WCA-CE	0.675					
WCA-I.3	0.557					
WCA-I.4	0.806					
WCA 4		0.553	0.783	0.264	0.605	0.553
WCA-AF.1	0.812					
WCA-AF.2	0.572					
WCA-AF.3	0.820					

	Loadings	AVE	Composite Reliability	R^2	Cronbachs' Alpha	Communality
eMICA		0.632	0.895	0.837	0.853	0.632
eMICA1.2	0.817					
eMICA2.1	0.749					
eMICA2.2	0.854					
eMICA2.3	0.848					
eMICA3.1	0.697					

Convergent validity is good in all cases, as they have AVE values above 0.500 for all constructs (Table 6). Regarding discriminant validity, the analysis gives some problems both in the comparison between factorial loads and factorial cross loads (Table 7) and in the correlations compared with the square root of AVE (Table 8). The comparison of factorial loads indicates that the problem could be given by the three variables indicated above (i.e., eMICA1.1, WCA-I.3, and WCA-AF.2).

Table 7
FACTORIAL LOADS OF THE INITIAL MODEL.

	WCA 1	WCA 2	WCA 3	WCA 4	eMICA
WCA-C.1	0.737	0.278	0.494	0.278	0.541
WCA-I.1	0.905	0.381	0.496	0.505	0.648
eMICA1.1	0.541	0.302	0.034	0.073	0.139
WCA-C.2	0.305	0.857	0.290	0.167	0.318
WCA-I.2	0.411	0.871	0.288	0.064	0.228
WCA-C.3	0.446	0.201	0.776	0.373	0.612
WCA-CE	0.455	0.503	0.675	0.305	0.616
WCA-I.3	0.164	-0.124	0.557	0.214	0.413
WCA-I.4	0.422	0.212	0.806	0.340	0.591
WCA-AF.1	0.402	0.100	0.410	0.812	0.605
WCA-AF.2	0.221	-0.049	0.171	0.572	0.292
WCA-AF.3	0.369	0.187	0.352	0.820	0.508
eMICA1.2	0.558	0.028	0.625	0.609	0.817
eMICA2.1	0.658	0.527	0.584	0.421	0.749
eMICA2.2	0.570	0.137	0.680	0.559	0.854
eMICA2.3	0.643	0.299	0.567	0.623	0.848
eMICA3.1	0.437	0.297	0.620	0.383	0.697

Source: own elaboration

Table 8
CORRELATIONS AND SQUARE ROOT OF AVE FOR THE INITIAL MODEL

	WCA 1	WCA 2	WCA 3	WCA 4	eMICA
WCA 1	1.000				
WCA 2	0.416	1.000			
WCA 3	0.553	0.335	1.000		
WCA 4	0.461	0.132	0.443	1.000	
eMICA	0.720	0.315	0.770	0.660	1.000
$\sqrt{AVE}$	0.743	0.864	0.710	0.743	0.795

Analysis of the proposed causal relationships shows that most of them are fulfilled with the exception of the causal relationships that have WCA 2 as their starting point (Table 9). The two ideas intended to be analysed in this part appear largely fulfilled: greater compliance in one content block causes greater compliance in subsequent blocks, especially in the case of WCA 1; further, eMICA can be considered as a variable that values the web as a whole and reflects the elements of WCA. It should be noted that the R^2 of eMICA is 0.837, a very high value that would indicate that little variance from the eMICA model escapes the WCA model. However, these data should be taken as provisional due to the deficiencies detected in the reliability and validity of the measurement model.

Table 9
CAUSAL ANALYSIS OF THE INITIAL MODEL

	Original Sample	Standard Error	T Statistics
WCA 1 → WCA 2	0.415***	0.086	4.848
WCA 1 → WCA 3	0.500***	0.082	6.075
WCA 1 → WCA 4	0.347**	0.121	2.858
WCA 1 →eMICA	0.368***	0.059	6.197
WCA 2 → WCA 3	0.127ns	0.100	1.273
WCA 2 → WCA 4	-0.108ns	0.101	1.069
WCA 2 →eMICA	-0.035ns	0.051	0.688
WCA 3 → WCA 4	0.287*	0.113	2.532
WCA 3 →eMICA	0.484***	0.064	7.554
WCA 4 →eMICA	0.280***	0.051	5.483

* p<0.05; ** p<0.01; *** p<0.001; ns not significant.

To improve the model, the three variables with low reliability and validity problems were eliminated: eMICA1.1, WCA-I.3, and WCA-AF.2. A content review of the items reveals irrelevant content: eMICA1.1 refers to information so basic that it already appears in the Google search engine without the need to enter the website; WCA-I.3 is information about the environment and not about the ski resort and, therefore, not very important

for the interests of the company; WCA-AF.2 refers to certifications, in very few cases, possessed by the ski resorts. Therefore, it is information that is already taken for granted, not referring to the company or things that they do not have. Once the three variables were eliminated, the analysis was repeated for the measurement model and the structural model. The results are shown in the next section.

4. RESULTS OF THE ANALYSIS AND FINAL MODEL

With elimination of the indicated variables, the individual reliability improves to good or very good parameters; further, Cronbach's alpha is low, but the composite reliability is very good (Table 10).

Table 10
RELIABILITY AND VALIDITY OF THE FINAL MODEL

	Loadings	AVE	Composite Reliability	R^2	Cronbachs' Alpha	Communality
WCA 1		0.697	0.821	0.000	0.571	0.697
WCA-C.1	0.782					
WCA-I.1	0.884					
WCA 2		0.746	0.855	0.159	0.660	0.746
WCA-C.2	0.868					
WCA-I.2	0.860					
WCA 3		0.588	0.811	0.398	0.650	0.588
WCA-C.3	0.782					
WCA-CE	0.732					
WCA-I.4	0.786					
WCA 4		0.708	0.829	0.284	0.589	0.708
WCA-AF.1	0.870					
WCA-AF.3	0.811					
eMICA		0.632	0.895	0.835	0.853	0.632
eMICA1.2	0.815					
eMICA2.1	0.747					
eMICA2.2	0.855					
eMICA2.3	0.848					
eMICA3.1	0.699					

Convergent validity is good in all cases, as they have AVE values above 0.500 for all constructions (Table 10). In regard to discriminant validity, although the results are not spectacular, they are acceptable both in the comparison between factorial loads and factorial cross loads (Table 11) and in the comparison between correlations and the square root of AVE (Table 12).

Table 11
FACTORIAL LOADS OF THE FINAL MODEL

	WCA 1	WCA 2	WCA 3	WCA 4	eMICA
WCA-C.1	0.782	0.276	0.491	0.291	0.542
WCA-I.1	0.884	0.379	0.521	0.501	0.647
WCA-C.2	0.302	0.868	0.344	0.208	0.319
WCA-I.2	0.388	0.860	0.354	0.082	0.227
WCA-C.3	0.480	0.201	0.782	0.390	0.612
WCA-CE	0.462	0.504	0.732	0.331	0.617
WCA-I.4	0.447	0.210	0.786	0.320	0.590
WCA-AF.1	0.445	0.102	0.396	0.870	0.605
WCA-AF.3	0.374	0.190	0.368	0.811	0.508
eMICA1.2	0.590	0.030	0.604	0.579	0.815
eMICA2.1	0.675	0.522	0.570	0.432	0.747
eMICA2.2	0.617	0.141	0.660	0.597	0.855
eMICA2.3	0.664	0.304	0.571	0.618	0.848
eMICA3.1	0.459	0.300	0.648	0.392	0.699

Table 12
CORRELATIONS AND SQUARE ROOT OF AVE FOR THE FINAL MODEL

	WCA 1	WCA 2	WCA 3	WCA 4	eMICA
WCA 1	1.000				
WCA 2	0.399	1.000			
WCA 3	0.605	0.404	1.000		
WCA 4	0.489	0.169	0.454	1.000	
eMICA	0.754	0.317	0.762	0.665	1.000
$\sqrt{AVE}$	0.835	0.864	0.767	0.841	0.795

Analysis of the proposed causal relationships shows that most of them are fulfilled with the exception of two that have WCA 2 as their starting point (Table 13). The causal relationship between WCA 2 and WCA 3 is now significant. The ideas exposed with the initial model are maintained once the measurement model is improved (Figure 1), i.e., the WCA is plausible to be converted into a phased model; eMICA is a global measurement tool, but it does not create nuances.

Table 13
CAUSAL ANALYSIS OF THE FINAL MODEL

	Original Sample	Standard Error	T Statistics
WCA 1 → WCA 2	0.399***	0.081	4.914
WCA 1 → WCA 3	0.528***	0.072	7.341
WCA 1 → WCA 4	0.359**	0.129	2.791
WCA 1 →eMICA	0.406***	0.061	6.658
WCA 2 → WCA 3	0.193*	0.086	2.252
WCA 2 → WCA 4	-0.084ns	0.099	0.845
WCA 2 →eMICA	-0.074ns	0.052	1.424
WCA 3 → WCA 4	0.271*	0.119	2.278
WCA 3 →eMICA	0.452***	0.069	6.542
WCA 4 →eMICA	0.274***	0.050	5.440

* p<0.05; ** p<0.01; *** p<0.001; ns not significant.

Thanks to the analysis of the two models (initial and final), it is revealed that the level 1 of phase 1 of the eMICA model is related to the most basic levels of information and communication of the WCA. The rest of the eMICA levels have a high correlation; therefore, they should be considered as items of the same construct. This implies that, when a level improves, the remainder improves in the same proportion, and the eMICA scale would lose much of its interest. Moreover, eMICA can be considered as a variable that values the web as a whole, being an undifferentiated reflection of the WCA. It is worth mentioning that eMICA$R^2$is 0.835, indicating that a great part of eMICA variance can be explained by the different elements of the WCA.

In contrast, in the WCA scale, there are groupings by levels with strong causal relationships (Figure 1): Information 1 and Communication 1 (WCA 1); Information 2 and Communication 2 (WCA 2); Information 4, Communication 3, and Electronic Commerce (WCA 3); Additional Elements (WCA 4). This leads us to propose a variation in the WCA model that provides an evolutionary view of the website's content (Table 14): the e-Commerce Web Content Adoption Model (eWCAM). This modification is intuitively plausible in view of the revision of the items that would remain in this new model or analysis tool (Appendix III).

Figure 1
FINAL ANALYSIS MODEL

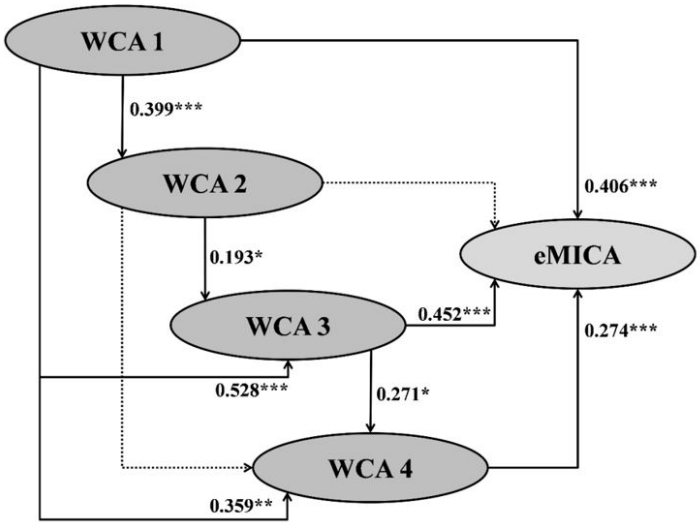

Table 14
E-COMMERCE WEB CONTENT ADOPTION MODEL (eWCAM)

Phase 1: Essential Content	
Information (I).1. Ski Resort Information.	Communication (C).1. Customers Interaction.
Phase 2: Advanced Content and Interactivity	
Information (I).2. Facilities and Services.	Communication (C).2. Web 2.0 Resources.
Phase 3: Internationalized eCommerce	
Information (I).3. Promotions.	Communication (C).3. Language Capabilities.
e-Commerce (EC)	
Phase 4: Mobile Adaptation	
1. Security of the Information	
2. Mobile Version	

It should be noted that e-commerce would remain as one of the elements of phase 3 of eWCAM and, therefore, would be the culmination of the development of the Information and Communication items. Phase 4 would include security and mobile elements. In fact, eWCAM would also reflect the historical evolution, as well as eMICA, by raising the mobile Internet as the last phase of evolution. It should be remembered that smart phones are the latest evolution, thus far, in consumer network use.

5. DISCUSSION AND MANAGERIAL IMPLICATIONS

The new model could be named the e-Commerce Web Content Adoption Model (eWCAM) as it adds the pace of adoption to web content analytics. The eWCAM allows reducing the initial 108 items to 50 items but retaining properties attributed to the WCA and eMICA models. The new model, therefore, allows a substantial savings of resources in the form of time and effort when analysing the degree of adaptation of websites to the information and interactivity needs demanded by new digital consumers.

At a technological level, the model created allows us to compare the development and maturity of websites, i.e., the robustness and completeness of different websites, in different periods of time, in different regions or countries, and for different areas of interest, considering the need for information and the importance of purchasing in an agile, safe, and fast way. The application of this tool can be a competitive advantage for companies to differentiate themselves from the competition in such a global and saturated world.

In terms of managerial implications, the adoption of the proposed new measurement model would mean considerable resource savings for destination-marketing managers and tourism companies, as they would have a tool that, in general terms, is easier to apply and is less costly, allowing for more continuous monitoring of web pages. It should be noted that a tourist's experience begins with the search for information to plan the trip and ends with contacts and comments after returning home, when that tourist expresses his/her opinions about the trip (Serra *et al*., 2018). In this process, the web pages are involved in the search for information, the resolution of doubts, and the closing of the sale, when possible. Therefore, the correct and quick analysis of the web environments of the entity itself (e.g., company, administration, association, destination, etc.) and those of the competitors is fundamental to attract and retain satisfied, loyal customers who enjoy a positive emotional experience. Therefore, an improved instrument to easily analyze the degree to which the organizations' websites are adapted to the needs of consumers when they are searching for relevant information through their entire process of travel would undoubtedly represent an important and useful tool.

It is believed that the results of this research can help resort managers, who need to pay more attention to developing the marketing functions of their websites and their online presence, and any business, destination, institution, or public administrator with responsibility in the tourism field to use their skills in a systematic way to obtain a comprehensive and efficient online presence, thus improving consumer participation and achieving an improved image.

- Limitations and Suggestions for Future Research

To create the proposal for this new model, data from a real sample of companies were used to avoid basing the proposal exclusively on theoretical reasoning, although these data refer to a specific context (ski resorts in Spain, Andorra, and France). Further, the new model should be tested in other contexts to determine whether it can guarantee the properties found in this case, e.g., in hotels, restaurants, tourist destinations, local administrations, associations, among others. Hence, quite a few replications are still needed to ensure

that the eWCAM is generalizable and has the ability to replace the WCA and eMICA. The first data, however, may make one believe that this new model, in its current format or with some improvement, can be superior in several aspects to the two previous models.

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APPENDIX I
WCA ITEMS

Information (I)
I.1. Information about the ski resort.
I.1.01. Description of the ski resort (type of resort, ski lifts, km of skiing, snow depth, etc.) I.1.02. Virtual tours I.1.03. Pictures of the resort I.1.04. Availability of information on ski pass rates and season passes I.1.05. News/information about events I.1.06. Resort location I.1.07. Links to tourism service review websites I.1.08. Ski resort status (open or closed) I.1.09. Status of roads to the resort (open/closed/snow chains) I.1.10. Information about the weather: current weather/forecast I.1.11. Trail maps I.1.12. Availability of trail safety rules I.1.13. Availability of pass rules I.1.14. Complete season calendar I.1.15. Different information for each season (winter and summer) I.1.16. Information about access to the ski resort through public transportation I.1.17 Information about environmental policy
I.2. Ski resort facilities and services.
I.2.01. Information about restaurants I.2.02. Information about ski school I.2.03. Information about child care I.2.04. Information about locker and ski storage services I.2.05. Store information I.2.06. Information about available snow cannons I.2.07. Information about area covered by snow cannons
I.3. Ski resort surroundings.
I.3.01. Tourist information about the area in which the resort is located I.3.02. Links to related businesses (e.g., accommodation, restaurants, adventure sports)
I.4. Promotions.
I.4.01. Promotional material and advertising I.4.02. Incentives: vouchers or coupons, Internet-only offers, online contests
Communication (C)
C.1. Interaction with customers.
C.1.01. Email and telephone number of the establishment C.1.02. Possibility for customers to submit online comments C.1.03. Instant messaging C.1.04. Online surveys C.1.05. FAQs C.1.06. Option to sign up to receive newsletters C.1.07. Restricted area for customers C.1.08. Possibility for customers to rate the quality of or their satisfaction with the services rendered

C.2. Web 2.0 resources.
C.2.01. Content syndication (RSS) C.2.02. Podcasting/vodcasting C.2.03. Applications allowing users to post content C.2.04. Possibility for customers to share content with friends (tweet, share, etc.) C.2.05. Link to Twitter (microblogging) C.2.06. Link to corporate blog C.2.07. Links to external image and video platforms (YouTube, Flickr, etc.) C.2.08. Links to corporate social media accounts (Facebook, LinkedIn, etc.) C.2.09. Link to wiki C.2.10. Other 2.0 platforms (Technorati, Netvibes, etc.)
C.3. Language capabilities.
C.3.01. Website available in multiple languages
E-Commerce (EC)
EC.01. Online bookings EC.02. Online purchase
Additional Features (AF)
AF.1. Security of the information
AF.1.01. Privacy policy or legal notice
AF.2. Certifications
AF.2.01. ISO 9000 quality certifications AF.2.02. Q Certification of Tourism Quality AF.2.03. Environmental certifications (ISO 14000) AF.2.04. Other certifications (ISO 27000, OSHAS 18000)
AF.3. Mobile version
AF.3.01. Link to mobile version of the website AF.3.02. Availability of a resort app

APPENDIX II
eMICA ITEMS

Phase 1: Promotion (Information)
Level 1.1: Basic information
1.1.01. Contact details: name, address, telephone number, fax number, other 1.1.02. Date and time of the last update 1.1.03. Resort status: open/closed 1.1.04. Status of roads to the resort: open/closed/snow chains 1.1.05. Photos of the resort 1.1.06. Information about the resort's location
Level 1.2: Abundant information
1.2.01. Email address and/or contact form 1.2.02. Trail report: profile, lifts, snow depths, elevations, other 1.2.03. Weather report: current weather/forecast 1.2.04. Availability of website in more than one language 1.2.05. Quality certifications 1.2.06. News/information about events 1.2.07. Promotions and online incentives (bonuses/coupons, offers, online contests)
Phase 2: Provision (Dynamic Information)
Level 2.1: Low level of interactivity
2.1.01. Season pass and season rates 2.1.02. Trail map 2.1.03. Links to internal information: lodging, restaurants, other 2.1.04. Links to external information: lodging, restaurants, other 2.1.05. Links to resort services: school, crèche, ski storage 2.1.06. Links to seasonal resort info (winter/summer) 2.1.07. Complete season calendar 2.1.08. Trail safety rules 2.1.09. Terms and conditions of use
Level 2.2: Average level of interactivity
2.2.01. Web map 2.2.02. Webcam 2.2.03. Possibility of booking accommodation 2.2.04. Possibility of purchasing passes (passes only) 2.2.05. Downloadable brochures and/or materials and/or photos 2.2.06. Possibility to sign up to receive news by email 2.2.07. Privacy policy or legal notice 2.2.08. Online surveys 2.2.09. FAQs 2.2.10. Suggestions 2.2.11. Search function (by keywords) 2.2.12. Online store (as showcase)

Level 2.3: High level of interactivity
2.3.01. Customer/partner area 2.3.02. Interactive trail map 2.3.03. Multimedia applications 2.3.04. Blogs, forums and/or chat features 2.3.05. Newsletters 2.3.06. Access to the ski resort's social media profiles 2.3.07. Possibility to collect online reviews from customers 2.3.08. Possibility for clients to rate the quality of/their satisfaction with the services provided 2.3.09. Links to tourism service review websites 2.3.10. Virtual tour 2.3.11. Videos using Flash animation 2.3.12. Mobile version of the website 2.3.13. Downloadable mobile app
Phase 3: Processing (Functional Maturity)
Level 3.1: Processing
3.1.01. Complete purchase (or renewal) process for season passes 3.1.02. Complete purchase process in the online shop (other products) 3.1.03. Complete purchase process for accommodation 3.1.04. Secure online transactions (digital signature, encryption, mobile security code) 3.1.05. Interaction with the server: database queries (access to customer profile, etc.)

APPENDIX III
eWCAM ITEMS

Phase 1: Essential Content (WCA 1)	
Information.1. Ski Resort Information	Communication.1. Customers Interaction
I.1.01. Description of the ski resort. I.1.02. Virtual tours I.1.03. Pictures of the resort I.1.04. Availability of information on ski pass rates and season passes I.1.05. News/information about events I.1.06. Resort location I.1.07. Links to tourism service review websites I.1.08. Ski resort status I.1.09. Status of roads to the resort I.1.10. Information about the weather: current weather/forecast I.1.11. Trail maps I.1.12. Availability of trail safety rules I.1.13. Availability of pass rules I.1.14. Complete season calendar I.1.15. Different information for each season I.1.16. Information about access to the ski resort through public transportation I.1.17 Information about environmental policy	C.1.01. Email and telephone number of the establishment C.1.02. Possibility for customers to submit online comments C.1.03. Instant messaging C.1.04. Online surveys C.1.05. FAQs C.1.06. Option to sign up to receive newsletters C.1.07. Restricted area for customers C.1.08. Possibility to rate the satisfaction with the services
Phase 2: Advanced Content and Interactivity (WCA 2)	
Information.2. Facilities and Services	Communication.2. Web 2.0 Resources
I.2.01. Information about restaurants I.2.02. Information about ski school I.2.03. Information about child care I.2.04. Information about locker and ski storage services I.2.05. Store information I.2.06. Information about available snow cannons I.2.07. Information about area covered by snow cannons	C.2.01. Content syndication (RSS) C.2.02. Podcasting/vodcasting C.2.03. Applications allowing users to post content C.2.04. Possibility for customers to share content with friends C.2.05. Link to Twitter C.2.06. Link to corporate blog C.2.07. Links to external image and video platforms C.2.08. Links to corporate social media accounts C.2.09. Link to wiki C.2.10. Other 2.0 platforms
Phase 3: Internationalized ecommerce (WCA 3)	
Information.3. Promotions	Communication.3. Language Capabilities
I.3.01. Promotional material and advertising I.3.02. Incentives: vouchers or coupons, online contests, etc.	C.3.01. Website available in multiple languages

E-Commerce (EC)
EC.01. Online bookings EC.02. Online purchase
Phase 4: Mobile Adaptation (WCA 4).
Additional Features (AF).1. Security of the Information
AF.1.01. Privacy policy or legal notice
Additional Features (AF).2. Mobile Version
AF.2.01. Link to mobile version of the website AF.2.02. Availability of a resort app